

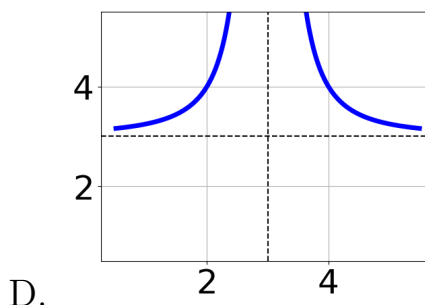
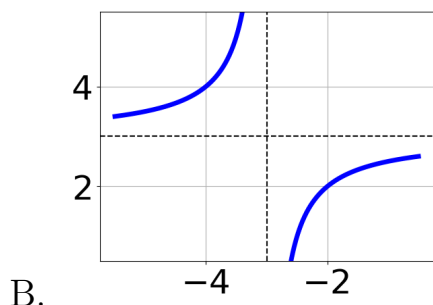
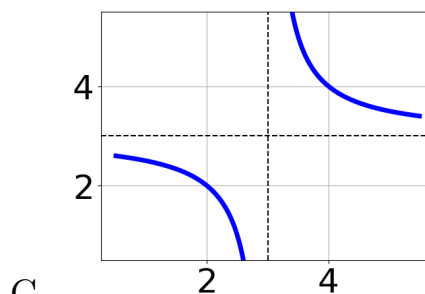
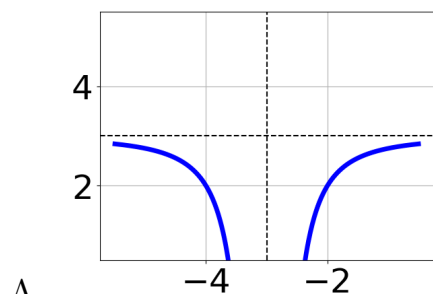
1. Determine the domain of the function below.

$$f(x) = \frac{4}{18x^2 + 36x + 16}$$

- A. All Real numbers except  $x = a$ , where  $a \in [-25.3, -23]$   
 B. All Real numbers except  $x = a$ , where  $a \in [-2.2, -0.9]$   
 C. All Real numbers.  
 D. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [-25.3, -23]$  and  $b \in [-13.3, -11.7]$   
 E. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [-2.2, -0.9]$  and  $b \in [-1.1, 0.1]$

2. Choose the graph of the equation below.

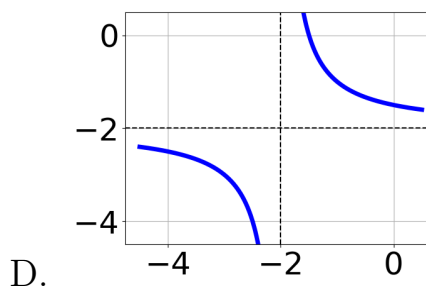
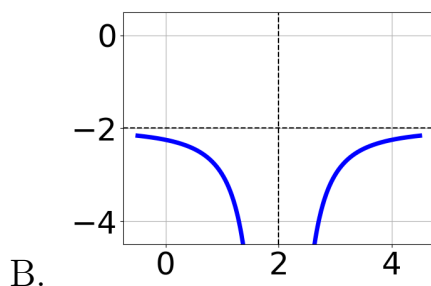
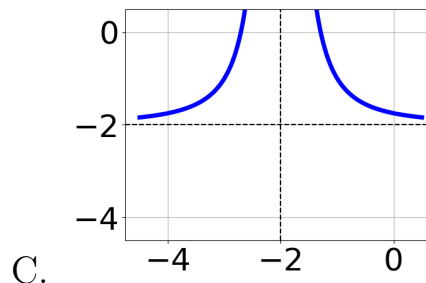
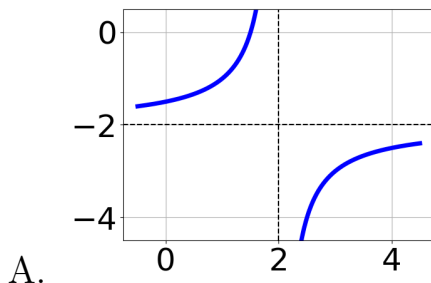
$$f(x) = \frac{1}{(x-3)^2} + 3$$



- E. None of the above.

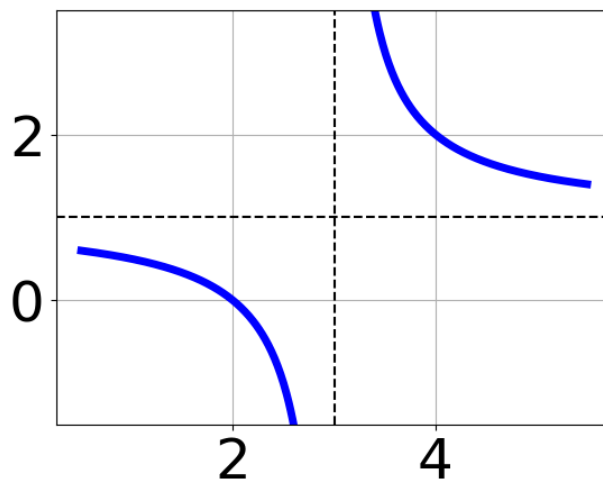
3. Choose the graph of the equation below.

$$f(x) = \frac{1}{x+2} - 2$$



E. None of the above.

4. Choose the equation of the function graphed below.



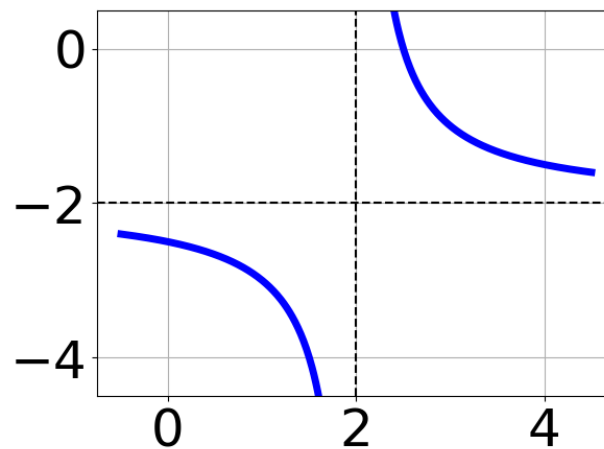
A.  $f(x) = \frac{-1}{x+3} + 1$

B.  $f(x) = \frac{-1}{(x+3)^2} + 1$

- C.  $f(x) = \frac{1}{x-3} + 1$
- D.  $f(x) = \frac{1}{(x-3)^2} + 1$
- E. None of the above

---

5. Choose the equation of the function graphed below.



- A.  $f(x) = \frac{1}{x+2} - 5$
- B.  $f(x) = \frac{-1}{x-2} - 5$
- C.  $f(x) = \frac{1}{(x+2)^2} - 5$
- D.  $f(x) = \frac{-1}{(x-2)^2} - 5$
- E. None of the above

---

6. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-10}{40x+20} + 1 = \frac{-10}{40x+20}$$

- A.  $x \in [0, 1.4]$

- B.  $x_1 \in [-0.9, -0.3]$  and  $x_2 \in [-1.8, 0.3]$
  - C.  $x_1 \in [-0.9, -0.3]$  and  $x_2 \in [-0.4, 1.5]$
  - D.  $x \in [-0.5, 1.5]$
  - E. All solutions lead to invalid or complex values in the equation.
- 

7. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{6}{-2x - 9} + -3 = \frac{-4}{18x + 81}$$

- A.  $x \in [3.1, 3.8]$
  - B.  $x \in [-5.43, -4.43]$
  - C. All solutions lead to invalid or complex values in the equation.
  - D.  $x_1 \in [-6.7, -5.6]$  and  $x_2 \in [-5.43, -3.43]$
  - E.  $x_1 \in [-5.5, -5.2]$  and  $x_2 \in [2.57, 4.57]$
- 

8. Determine the domain of the function below.

$$f(x) = \frac{6}{24x^2 - 38x + 15}$$

- A. All Real numbers except  $x = a$ , where  $a \in [0.71, 0.77]$
  - B. All Real numbers.
  - C. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [0.71, 0.77]$  and  $b \in [0.82, 0.85]$
  - D. All Real numbers except  $x = a$ , where  $a \in [11.91, 12.1]$
  - E. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [11.91, 12.1]$  and  $b \in [29.9, 30.18]$
-

9. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-2x}{2x+2} + \frac{-4x^2}{-12x^2 - 18x - 6} = \frac{-7}{-6x - 3}$$

- A.  $x_1 \in [-1.47, -1.27]$  and  $x_2 \in [-0.26, 0.74]$
  - B.  $x \in [-0.58, -0.31]$
  - C. All solutions lead to invalid or complex values in the equation.
  - D.  $x_1 \in [-1.18, -0.67]$  and  $x_2 \in [-1.64, -0.49]$
  - E.  $x \in [-1.18, -0.67]$
- 

10. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-3x}{-6x+5} + \frac{-2x^2}{-12x^2 + 52x - 35} = \frac{-4}{2x-7}$$

- A.  $x \in [3.15, 4.34]$
  - B.  $x \in [-3.35, -0.26]$
  - C.  $x_1 \in [0.39, 3.08]$  and  $x_2 \in [-1.17, 7.83]$
  - D.  $x_1 \in [0.39, 3.08]$  and  $x_2 \in [-2.78, -0.78]$
  - E. All solutions lead to invalid or complex values in the equation.
-